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CONFIDENTIAL] is likely to encourage other backhaul providers to bid more aggressively **[BEGIN HIGHLY CONFIDENTIAL]**
[END HIGHLY CONFIDENTIAL] a pro-competitive effect.²⁰

- For these reasons, the MSOs and Verizon Telecom will continue to compete aggressively against each other and all other backhaul providers. Where there are profits to be made by providing these services, there is every reason to expect that the MSOs and Verizon Telecom will pursue opportunities to earn them.²¹

*Sprint, et al. 's arguments that the MSOs and Verizon Wireless will become "friendly" and that this will entice the MSOs to discriminate against other wireless carriers in order to help Verizon Wireless – a vertical concern – also are unfounded.*²²

- The only material effect of the MSOs discriminating against other wireless carriers would be to hurt the MSOs' emerging backhaul businesses. For example, if an MSO raised prices to non-Verizon Wireless carriers, or refused to do business with them, it would reduce the MSO's competitiveness as a backhaul provider. It would be illogical for an MSO to harm a profitable and emerging segment of its business in order to aid Verizon Wireless.²³
- Opponents argue that the MSOs might raise other wireless carriers' backhaul costs in order to raise the opponents' costs and thereby, arguably, make Verizon Wireless a more attractive option for consumers, thus increasing the MSOs' opportunities to earn commissions when they sell Verizon Wireless services. However, an MSO receives only a small, one-time commission when it signs up Verizon Wireless customers. As Dr. Israel explains, these small commission payments pale in comparison to the substantial recurring backhaul revenue an MSO would lose from such a discriminatory strategy.²⁴
- Moreover, the MSOs are relatively new entrants to this competitive space and, therefore, have little – if any – *ability* to raise prices.²⁵
- Backhaul costs make up a fraction of wireless carriers' prices. So, even if the MSOs could increase their backhaul prices to the wireless carriers, those increases likely would not be significant enough to cause wireless carriers to change their

²⁰ *Id.* ¶¶ 11-12.

²¹ *Id.* ¶ 13.

²² *Id.* ¶¶ 14-27.

²³ *Id.* ¶¶ 25-27.

²⁴ *Id.* ¶ 26.

²⁵ *Id.* ¶ 22.

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retail prices or service offerings in any way that would benefit Verizon Wireless or the MSOs' sale of Verizon Wireless services.²⁶

Far from harming competition, the backhaul provisions in the Commercial Agreements have the potential to make the marketplace for backhaul services even more competitive. The MSOs compete with numerous other backhaul providers, including AT&T, CenturyLink, DragonWave, DukeNet, FPL Fiber, Level 3, TMI, tw telecom, Verizon Telecom, Windstream, XO, and Zayo. To the extent the backhaul provisions in the Commercial Agreements would enable an MSO to compete and secure more backhaul business from Verizon Wireless, the MSOs will become more effective competitors in offering backhaul to non-Verizon Wireless carriers, and the marketplace will become even more competitive (especially because if an MSO wins a contract to provide backhaul services to Verizon Wireless at a particular location, it becomes more economical for the MSO to provide backhaul services to other wireless carriers at that location).

In any event, Sprint, et al.'s complaints about backhaul are not relevant to the license assignment applications that are before the Commission and should be addressed (if at all) in the pending industry-wide rulemaking. The Commission recently held in the *AT&T-Qualcomm Order* that access to backhaul facilities is an industry-wide issue that is the subject of a pending rulemaking proceeding and is not related to any transaction-specific harm.²⁷ The same is true here.

B. Wi-Fi

1. The Commercial Agreements in No Way Affect Wi-Fi.

The MSOs established their Wi-Fi hotspots as extensions of their residential high-speed Internet ("HSP") businesses and as key components of their efforts to reduce HSI churn and increase HSI customer subscriptions. Because Wi-Fi is an unlicensed service, Commission approval of the MSOs' Wi-Fi business plans is not required and has not been requested in the context of the MSOs' spectrum sale to Verizon Wireless or otherwise. The MSOs provide Wi-Fi capabilities to their HSI customers (and, through CableWiFi, to one another's HSI customers and those of Cablevision) as a value-added feature of their HSI services. This capability is provided to MSO HSI customers without regard to their choice of wireless carrier; it does not matter whether they are customers of Verizon Wireless, AT&T Wireless, T-Mobile, Sprint, MetroPCS, or any one of the scores of other wireless carriers. Nothing about the license assignments or the separate Commercial Agreements will change this fact.

²⁶ *Id.* ¶ 23.

²⁷ *Application of AT&T Inc. and Qualcomm Incorporated for Consent to Assign Licenses and Authorizations*, Order, 26 FCC Rcd 17589, ¶ 79 (2011) ("*AT&T-Qualcomm Order*") (noting that the Commission "will not impose conditions to remedy pre-existing harms or harms that are unrelated to the transaction" and that requests for relief related to backhaul are better addressed in the ongoing industry-wide proceeding).

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To date, these Wi-Fi arrangements are entirely between HSI providers and HSI customers. Although certain traffic that might otherwise be transported over wireless carriers' networks may instead be routed over MSOs' Wi-Fi hotspots and then their Internet backbones, the MSOs have not yet made business arrangements with wireless carriers to facilitate "Wi-Fi offload." Sprint, *et al.* are making speculative assertions about a business that does not even exist, the very kind of conjecture – devoid of any supporting facts – that the Commission has traditionally said it would not entertain in license transfer proceedings.²⁸ But, again, if there are profitable business arrangements to be struck, the MSOs would be glad to explore them, and nothing about the license assignments or the Commercial Agreements will diminish the MSOs' incentives or ability to pursue such opportunities.

Sprint, et al. can point to no provision of any of the Commercial Agreements that grants Verizon Wireless the right to offload its traffic onto the MSOs' Wi-Fi access points. Moreover, nothing in the agreements precludes the MSOs from providing Wi-Fi to any other party.
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[END HIGHLY CONFIDENTIAL] The MSOs are free to sell Wi-Fi offload service to Verizon Wireless' competitors. **[BEGIN HIGHLY CONFIDENTIAL]**

²⁸ See, e.g., *Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corp. for Consent to Transfer Control of Licenses and Authorizations*, Memorandum Opinion & Order, 19 FCC Rcd 21522, ¶ 181 (2004) ("We are therefore not persuaded by [] arguments . . . that, after the merger, Cingular will have the ability and the incentive to use its larger share of subscribers to exact discriminatory rates from roaming partners. We find these claims to be unsupported speculation. The parties making these claims have not presented any evidence, or made any specific allegations, that Cingular has taken steps in the past to charge a particular carrier unreasonable roaming rates" (internal citations omitted)); *Applications of GTE Corp., Transferor, and Bell Atlantic Corp., Transferee, for Consent to Transfer Control of Domestic and International Section 214 and 310 Authorizations, et al.*, Memorandum Opinion & Order, 15 FCC Rcd 14032, ¶ 428 (2000) ("We reject claims that we should prohibit these license transfers because of speculation that service quality in the merged company's service areas will deteriorate"); *Applications of Ameritech Corp., Transferor, and SBC Communications Inc., Transferee, for Consent to Transfer Control, et al.*, Memorandum Opinion & Order, 14 FCC Rcd 14172, ¶ 547 (1999) (rejecting claims that service quality in the Ameritech region will deteriorate as speculative); see also *id.*, Statement of Commissioner Harold Furchtgott-Roth ("The record, however, presents no clear evidence that either SBC or Ameritech had developed plans to provide substantial in-region competition for local exchange services in the other company's territory. Whether plans that might have been developed at some future date are affected by the proposed license transfers is idle speculation."); *Tel. & Data Sys. v. FCC*, 19 F.3d 42, 48 (D.C. Cir. 1994) (finding allegations that Comcast, post-license transfer, would engage in anticompetitive action to drive down roaming revenues of another carrier "amounts to nothing more than 'unadorned speculation.'" (internal citation omitted)).

²⁹ See VZW Agent Agreement § 2.2.2(b) (Comcast); VZW Agent Agreement § 2.2.2(b) (Bright House); VZW Agent Agreement § 2.2.2(b) (Time Warner Cable); VZW Agent Agreement § 2.2.2(b) (Cox); Comcast Reseller Agreement § 2.2.3.1; Bright House Reseller Agreement § 2.2.3.1; Time Warner Cable Reseller Agreement § 2.2.3.1; Cox Reseller Agreement § 2.2.3.1.

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[END HIGHLY CONFIDENTIAL] And nothing about the Innovation Technology Joint Venture (“ITJV”) will foreclose Verizon Wireless’ competitors’ access to the MSOs’ Wi-Fi connections, as Sprint, *et al.* have claimed. Sprint, *et al.* have not identified any provision of the ITJV Agreement that prevents Verizon Wireless’ competitors from accessing the MSOs’ Wi-Fi hotspots – and, in fact, there is no such provision. Moreover, no provision of the ITJV Agreement requires ITJV members to develop Wi-Fi technologies through the ITJV. To the contrary, the ITJV Agreement **[BEGIN HIGHLY CONFIDENTIAL]**

[END HIGHLY CONFIDENTIAL] No other provisions of the Commercial Agreements relate to Wi-Fi.

2. There Is No Credible Theory of Harm to Wi-Fi Competition.

As the Israel Report demonstrates, Sprint, et al.’s arguments that the Commercial Agreements will result in vertical foreclosure of access to the MSOs’ Wi-Fi hotspots are without merit. Nothing about the Commercial Agreements creates incentives for the MSOs to act in a way that harms Wi-Fi competition.

- Wi-Fi offload services – the provision of Wi-Fi to wireless carriers enabling them to divert traffic in order to reduce network congestion – are not currently being provided by the MSOs directly to wireless carriers. Sprint, *et al.* have suggested a theory of vertical foreclosure (which generally relies on the restriction of a scarce input) without an actual scarce input to be restricted.³³
- Wi-Fi offload is not an input into wireless service, and it may never become an input into wireless service. Therefore, claims that lack of access to Wi-Fi will harm the wireless business are entirely speculative.³⁴
- Even assuming Wi-Fi offload services were to become an important input into wireless service, Sprint, *et al.* do not describe a mechanism for competitive harm under the Commercial Agreements. Sprint posits that the relationship between

³⁰ See VZW Agent Agreement § 2.2.2(b) (Comcast); VZW Agent Agreement § 2.2.2(b) (Bright House); VZW Agent Agreement § 2.2.2(b) (Time Warner Cable); VZW Agent Agreement § 2.2.2(b) (Cox).

³¹ See Comcast Reseller Agreement § 2.2.3.1; Bright House Reseller Agreement § 2.2.3.1; Time Warner Cable Reseller Agreement § 2.2.3.1; Cox Reseller Agreement § 2.2.3.1.

³² See Limited Liability Company Agreement of Joint Operating Entity, LLC (“ITJV Agreement”) § 10.02(a).

³³ See Israel Report ¶ 30.

³⁴ *Id.* ¶ 35.

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the MSOs and Verizon Wireless under the Commercial Agreements provides an incentive for the MSOs to engage in a “raising rivals’ costs” strategy against Verizon Wireless’ rivals. To begin with, this is an odd theory because the MSOs do not currently compete with Verizon Wireless’ rivals.³⁵

- More to the point, the economic literature is clear that a raising rivals’ costs strategy will only cause harm if four conditions are all simultaneously present. Here, however, *none* of those conditions are present. Because Wi-Fi offload services are not currently sold, Sprint cannot demonstrate that: 1) the MSOs have the ability to raise Wi-Fi offload costs; 2) the increased cost to Verizon Wireless’ rivals is significant enough to cause the rivals to increase their service prices; 3) the rivals’ increased service prices translate into increased sales of Verizon Wireless’ service by the MSOs; and 4) the commissions the MSOs earn from those increased sales are sufficient to cover profits the MSOs lose as a result of raising their prices to Verizon Wireless’ rivals.³⁶ None of these critical elements can be shown because there is no market for Wi-Fi offload service. Sprint is speculating about a hypothetical market,³⁷ an approach the Commission has declined to accept in license transfer proceedings.³⁸

In short, theories of vertical harm based on Wi-Fi are wholly speculative, positing a market that does not exist today in which the MSOs sell Wi-Fi offload services to wireless carriers. The extent of future demand for Wi-Fi offload services, the number of competitors, and other features of this hypothetical market are unknown. In addition, by degrading the Wi-Fi capabilities they currently provide to their HSI customers, the MSOs would risk alienating the millions of their customers who have chosen non-Verizon Wireless services. This strategy makes no sense. The Commission should disregard Sprint, *et al.*’s speculative claims about Wi-Fi and a Wi-Fi offload market that has yet to develop.

*Sprint, et al. make other incorrect assertions about the MSOs’ Wi-Fi services.*³⁹ MetroPCS and RCA claim that the *Data Roaming Order* applies to the MSOs’ unlicensed Wi-Fi services,⁴⁰ and other parties claim that the *Data Roaming Order* supports a Wi-Fi roaming

³⁵ *Id.* ¶¶ 33, 37.

³⁶ These same conditions are required to show that a raising rivals’ costs theory will cause harm in the backhaul context. As Dr. Israel demonstrates, the conditions are not present in that context either. *Id.* ¶¶ 34-37.

³⁷ *Id.* ¶ 28-37.

³⁸ *See supra* note 28.

³⁹ Although plainly irrelevant to this proceeding, Sprint asserts that “recent model cable set top boxes even contain[] [Wi-Fi] chip sets that convert every customer’s home into a [Wi-Fi] hotspot controlled by the Cable Company.” Sprint June 19 Ex Parte at 3. This is incorrect. None of the set-top boxes currently offered by the MSOs contain Wi-Fi chip sets.

⁴⁰ MetroPCS July 13 Ex Parte at 2-3; RCA July 20 Ex Parte at 2.

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condition.⁴¹ MetroPCS also cites baseless “indications” that the MSOs “may not plan to provide wireless companies with access [to the MSOs’] CableWiFi network on commercially reasonable terms” as grounds for requesting that the Commission regulate Wi-Fi as a common carrier service.⁴² These proposals mischaracterize the law and would be bad public policy for the Commission to adopt. First, MetroPCS and RCA are incorrect when they assert that the *Data Roaming Order* already applies to Wi-Fi. The *Data Roaming Order* applies to facilities-based providers of mobile data services.⁴³ Plainly, the *Data Roaming Order* does not apply to unlicensed uses of spectrum, such as Wi-Fi, that rely on Part 15 devices, because the Act defines “mobile service” to include services “for which a license is required,” and the Commission has determined expressly that this language excludes Part 15 unlicensed radio frequency devices from the definition of “mobile services.”⁴⁴ Second, the Commission has recognized that imposing regulations on nascent offerings, such as the MSOs’ networks of Wi-Fi hotspots, has more risk than reward.⁴⁵

3. There Is No Barrier to Entering the Wi-Fi Marketplace.

Finally, nothing about the proposed license assignments prevents other companies from creating their own Wi-Fi hotspots – because Wi-Fi is an unlicensed service, they would not even need Commission approval to do so. If and to the extent that a market develops for Wi-Fi offload services, some wireless carriers may well choose to enter that market, and there is no reason to believe the MSOs could impede their entry.

II. The MSOs Welcome Sprint’s Interest In Becoming A Wi-Fi Offload Customer.

It’s important to set the record straight regarding [BEGIN HIGHLY CONFIDENTIAL]

[END HIGHLY CONFIDENTIAL] both as to events that occurred before SpectrumCo’s agreements with Verizon Wireless were announced and afterwards.⁴⁶

⁴¹ See RTG July 19 Ex Parte at 2; Sprint July 19 Ex Parte at 2.

⁴² MetroPCS July 13 Ex Parte at 2.

⁴³ *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, Second Report & Order, 26 FCC Rcd 5411, ¶ 1 (2011) (“*Data Roaming Order*”), recon. pending, appeal pending.

⁴⁴ See 47 U.S.C. § 153(33)(C); 47 C.F.R. § 20.7(h); *Implementation of Sections 3(n) and 332 of the Communications Act; Regulatory Treatment of Mobile Services*, Second Report & Order, 9 FCC Rcd 1411, ¶ 37 (1994) (clarifying that the definition of “mobile services” does not include Part 15 devices and unlicensed PCS and noting that an unlicensed approach could be expected to foster new technologies by permitting manufacturers to introduce new products without the delays associated with licensing).

⁴⁵ See *supra* note 7.

⁴⁶ As a matter of practice, and often agreement between the parties, Comcast regards business-to-business discussions as confidential. Comcast recounts here its executives’ recollections of [BEGIN HIGHLY

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Sprint states that, **[BEGIN HIGHLY CONFIDENTIAL]**

CONFIDENTIAL] **[END HIGHLY CONFIDENTIAL]** only to the extent that
Sprint has chosen to provide **[BEGIN HIGHLY CONFIDENTIAL]**
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⁴⁷ Sprint July 11 Ex Parte at 1.

⁴⁸ *Id.* at 1-2.

⁴⁹ *Id.* at 2.

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Plainly, entering into the Commercial Agreements has not prevented the MSOs from evaluating opportunities to provide Wi-Fi offload services to non-Verizon Wireless carriers,

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The provision of backhaul and Wi-Fi services is irrelevant to this license assignment proceeding, and Sprint, *et al.* have offered no credible theory or any facts to support their claims that the Commercial Agreements will harm the backhaul or Wi-Fi businesses. The Commission should reject these speculative claims and approve the proposed license assignment transactions.

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**Implications of the Verizon Wireless &
SpectrumCo/Cox Commercial Agreements
for Backhaul and Wi-Fi Services Competition**

WT Docket No. 12-4

**Mark Israel
August 1, 2012**

I. INTRODUCTION

A. ASSIGNMENT AND SUMMARY OF CONCLUSIONS

1. I have been asked by counsel for the involved parties to review the Commercial Agreements between Verizon Wireless (“VZW”) and a set of Multi System Operators—Comcast Cable, Time Warner Cable, Bright House Networks, and Cox Communications (collectively, the “MSOs”)—and to respond to certain arguments made by parties opposed to these transactions (the “opposing parties”).¹ In particular, I have been asked to comment on the economic implications of the Commercial Agreements for the provision and pricing of both backhaul and Wi-Fi services.

2. By way of background:

- Backhaul is the name for a service in which a service provider transports data and voice traffic from a carrier’s cell sites to its network backbone. It is an important input in the provision of wireless services.
- Wi-Fi services allow consumers using wireless devices to send and receive information wirelessly over local computer networks. Use of Wi-Fi services may provide consumers with faster data speeds (relative to cellular networks) and, by removing traffic from the cellular network, Wi-Fi services may help customers avoid data overage charges.

¹ See Application of Cellco Partnership d/b/a Verizon Wireless and SpectrumCo LLC for Consent to Assign Licenses, WT Docket No. 12-4, File No. 0004993617 (filed Dec. 16, 2011) (seeking consent to assign 122 Advanced Wireless Services licenses to Verizon Wireless from SpectrumCo); Application of Cellco Partnership d/b/a Verizon Wireless and Cox TMI Wireless, LLC for Consent to Assign Licenses, WT Docket No. 12-4, File No. 0004996680 (filed Dec. 21, 2011) (seeking consent to assign 30 Advanced Wireless Services licenses to Verizon Wireless from Cox Wireless).

- The use of Wi-Fi services to divert traffic that would otherwise be transmitted over cellular networks—particularly when this helps to reduce cellular network congestion—is sometimes referred to as “Wi-Fi offload.” One might hypothesize that, distinct from the existing usage of Wi-Fi services by end consumers, wireless carriers may at some point contract directly with Wi-Fi providers to purchase Wi-Fi offload services, thus arranging to have data that would otherwise be carried over their cellular networks instead be transmitted over Wi-Fi networks. For clarity, I refer to such potential arrangements between wireless carriers and Wi-Fi providers as “carrier-purchased Wi-Fi offload services.” To my knowledge, no such service contracts exist in the U.S. today.²

3. Based on my review of the Commercial Agreement and other relevant evidence, I find that the opposing parties’ arguments with regard to backhaul and Wi-Fi services are without merit, as they lack both a sound economic basis and sound factual support. In particular, I find no support for a claim that the Commercial Agreements will impede competition in the provision of backhaul or Wi-Fi services. I also find no support for a claim that the Commercial Agreements will cause the MSOs to alter their provision of backhaul or Wi-Fi services in a way that would harm downstream competition among wireless service providers.

² Interview with Tom Nagel, Senior Vice President and General Manager of Wireless Services, Comcast Communications, July 18, 2012.

B. BACKGROUND AND OVERVIEW

1. The Commercial Agreements

4. The Commercial Agreements between VZW and the MSOs include the Agency Agreements, Reseller Agreements, and an Innovation Technology Joint Venture Agreement (“ITJV”).³ The Agency Agreements enable VZW and the MSOs to act as sales agents for one another’s products and services.⁴ The Reseller Agreements give each MSO the option to sell its own branded wireless service using the VZW network starting in 2016.⁵ The ITJV is intended to facilitate the development of intellectual property and technology to integrate wired multichannel video and high speed Internet (“wired”) and wireless services and technologies.⁶

2. Opposing parties’ concerns regarding backhaul services

5. The opposing parties raise two distinct types of concerns regarding the impact of the

³ Cox Communications does not have an ownership interest in the ITJV.

⁴ VZW Agent Agreement between Cellco Partnership d/b/a Verizon Wireless and Comcast Cable Communications, dated 12/2/11; VZW Agent Agreement between Cellco Partnership d/b/a Verizon Wireless and Time Warner Cable Inc., dated 12/2/11; VZW Agent Agreement between Cellco Partnership d/b/a Verizon Wireless and Bright House Networks, LLC, dated 12/2/11; VZW Agent Agreement between Cellco Partnership d/b/a Verizon Wireless and Cox Communications, Inc., dated 12/16/11; Comcast Agent Agreement between Comcast Cable Communications, LLC and Cellco Partnership d/b/a Verizon Wireless, dated 12/2/11; TWC Agent Agreement between Time Warner Cable Inc. and Cellco Partnership d/b/a Verizon Wireless, dated 12/2/11; BHN Agent Agreement between Bright House Networks, LLC and Cellco Partnership d/b/a Verizon Wireless, dated 12/2/11; Cox Agent Agreement between Cox Communications, Inc. and Cellco Partnership d/b/a Verizon Wireless, dated 12/16/11.

⁵ Reseller Agreement for Comcast Cable Communications, LLC between Cellco Partnership d/b/a Verizon Wireless and Comcast Cable Communications, LLC; Reseller Agreement for Time Warner Cable Inc. between Cellco Partnership d/b/a Verizon Wireless and Time Warner Cable Inc.; Reseller Agreement for Bright House Networks, LLC between Cellco Partnership d/b/a Verizon Wireless and Bright House Networks, LLC; Reseller Agreement for Cox Communications, Inc. between Cellco Partnership d/b/a Verizon Wireless and Cox Communications, Inc.

⁶ See Limited Liability Company Agreement of Joint Operating Entity, LLC, dated 12/2/11.

Commercial Agreements on competition in backhaul services.

- First, they raise “horizontal” concerns, including (i) that the Commercial Agreements may soften competition between Verizon and the MSOs in the provision of backhaul services,⁷ or alternatively (ii) that VZW may discriminate in favor of the MSOs’ backhaul services and against independent suppliers of backhaul.⁸
- Second, they raise “vertical” concerns, namely that the Commercial Agreements may give the MSOs an incentive to bolster VZW’s wireless service by providing backhaul services on terms that favor VZW and disadvantage VZW’s rivals, thus harming competition among wireless carriers.⁹

6. As explained in Section II, I conclude that neither the horizontal concerns nor the vertical concerns that have been raised regarding the effects of the Commercial Agreements on competition in backhaul services hold up to scrutiny. This conclusion is supported by the economic analysis presented throughout Section II, but one simple fact may best illustrate the key points: Since Comcast signed the Commercial Agreements with VZW on December 2, 2011, **[BEGIN HIGHLY CONFIDENTIAL]**

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⁷ See Mar. 26, 2012 RCA Reply Comments at 17, 34, 39-40; Feb. 21, 2012 Sprint Comments at 9-13; Feb. 21, 2012 NTCH Petition to Deny at 12-13.

⁸ See Mar. 26, 2012 Level 3 Reply Comments at 7-9. Such concerns are “horizontal” because they involve horizontal competition within the backhaul market.

⁹ See Sprint Reply Comments at 14-15. Such concerns are “vertical” because they reflect ways in which changes in backhaul market conditions may affect downstream competition among wireless services providers.

HIGHLY CONFIDENTIAL] The Commercial Agreements clearly have not stopped the MSOs from doing backhaul business with VZW's rivals on mutually agreeable terms.¹⁰

3. Opposing parties' concerns regarding Wi-Fi services

7. In addition to the backhaul concerns, the opposing parties have expressed concern that the Commercial Agreements will induce the MSOs to provide Wi-Fi services, particularly carrier-purchased Wi-Fi offload services, in a way that discriminates against VZW's rivals and in favor of VZW.¹¹ Like the concerns about backhaul—and indeed for many of the same reasons—the Wi-Fi concerns are without basis. But unlike backhaul, which is at least currently an input into wireless service, carrier-purchased Wi-Fi offload services are not currently an input purchased by any U.S. wireless service provider.¹² As a result, my discussion focuses first and primarily on backhaul, and then in Section III I turn to a shorter discussion of the even more speculative and less factually supported theories regarding carrier-purchased Wi-Fi offload services.

II. BACKHAUL ISSUES

8. As an initial matter, it is important to place the MSOs' limited role in the provision of

¹⁰ Interview with Terrence Connell, Senior Vice President of Sales & Operations, Comcast Business Services, July 17, 2012. **[BEGIN HIGHLY CONFIDENTIAL]**

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¹¹ See, e.g., Mar. 26, 2012 Sprint Reply Comments at 12, 13; Mar. 26, 2012 Computer & Communications Industry Association (CCIA) Reply Comments at 19.

¹² Interview with Tom Nagel, Senior Vice President and General Manager of Wireless Services, Comcast Communications, July 18, 2012.

backhaul services in proper perspective. For example, Comcast, the largest MSO in terms of number of subscribers, entered its first backhaul service contract [BEGIN HIGHLY

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A. THE HORIZONTAL BACKHAUL CONCERNS RAISED BY OPPOSING PARTIES ARE WITHOUT MERIT

9. The MSOs compete against Verizon Telecom, AT&T, and a host of other wired, wireless, and cable companies in the provision of backhaul services to wireless carriers.¹⁵

Verizon Communications, Inc. (“Verizon”) is the majority owner of VZW and the parent of Verizon Telecom.¹⁶ The opposing parties’ horizontal concern is apparently that, because of the affiliation between Verizon and VZW, the Commercial Agreements may attenuate the intensity of backhaul competition between the MSOs and Verizon Telecom. This claim is without basis.

10. Although the opposing parties argue vaguely that the Commercial Agreements will result in softening of competition between the MSOs and Verizon Telecom, an analysis of the Commercial Agreements does not support this concern. The opposing parties point to no provision of the Commercial Agreements and establish no reasonable mechanism under which the agreements would diminish competition between Verizon Telecom and the MSOs

¹³ Interview with Terrence Connell, Senior Vice President of Sales & Operations, Comcast Business Services, July 17, 2012.

¹⁴ See ¶ 22.

¹⁵ See ¶ 21 for details.

¹⁶ VZW is a joint venture between Verizon and Vodafone Group Plc (Vodafone). Verizon owns a controlling 55 percent interest in Verizon Wireless, and Vodafone owns the remaining 45 percent. (See Verizon 2011 10K).

in the provision of backhaul services. In particular, the agreements do not provide any mechanism (*e.g.*, a direct ownership share in Verizon by an MSO, or a full merger) under which an MSO's loss of a backhaul customer to Verizon Telecom would either directly or indirectly benefit the MSO. Likewise, the agreements do not provide any mechanism under which Verizon Telecom's loss of a backhaul customer to an MSO would either directly or indirectly benefit Verizon Telecom. Similarly, there is no mechanism whereby Verizon will benefit if a user purchases backhaul from the MSOs rather than a third party, or any mechanism whereby the MSOs will benefit if a user purchases backhaul from Verizon rather than a third party.¹⁷

11. Level 3 Communications ("Level 3") raises a separate but related concern about a provision of the Agency Agreements under which [BEGIN HIGHLY CONFIDENTIAL]

¹⁷ In its July 12, 2012 and July 25, 2012 *Ex Parte* filings, Sprint provides a vague outline of a theory that seems to claim that the Commercial Agreements may facilitate collusion. For example, it argues that if an MSO refuses to take actions to help Verizon, Verizon may punish the MSO by expanding (or increasing promotions of) FiOS in that MSO's territory. Alternatively, it argues that if Verizon refuses to help the MSOs, the MSOs could punish Verizon by providing other carriers with preferential Wi-Fi access. (Sprint, Notice of *Ex Parte* Communications, WT Docket No. 12-4, July 12, 2012; Sprint, Notice of *Ex Parte* Communications, WT Docket No. 12-4, July 25, 2012.)

Notably, however, Sprint provides no indication of how the Commercial Agreements change Verizon's ability or incentive to use FiOS in this (highly speculative) way, or how the Commercial Agreements change the MSOs' ability or incentive to use Wi-Fi access in this (highly speculative) way.

More generally, one could use similarly vague arguments to speculate that any joint venture or cooperative arrangement *could* lead to collusion. In order to avoid eliminating many pro-competitive ventures such as this one—and generally stifling firms' willingness to seek out pro-competitive joint ventures—such claims must be bolstered by *actual evidence that such theoretical possibilities are, in fact, likely*. I have seen no such evidence.

[END HIGHLY CONFIDENTIAL] Level 3 claims that such a provision “may impede the ability of Level 3 and other independent providers of wireless backhaul to compete with” the MSOs in the provision of the services.¹⁹ Importantly, however, the Commercial Agreements do not impose exclusivity between VZW and the MSOs in purchasing backhaul services. Nor do the agreements compel VZW to purchase backhaul services from the MSOs regardless of the terms offered by the MSOs. Indeed, as a matter of economics, if Level 3’s rates and terms are better than the MSOs’ rates and terms, I would expect Verizon Wireless to choose Level 3, and there is nothing in the Commercial Agreements that prohibits that choice. Thus, the Commercial Agreements do not preclude Level 3 (or any provider) from bidding on and winning backhaul contracts from VZW or any other wireless carrier.

12. At its core, Level 3’s claims conflate the notion of protecting competition—the goal of the U.S. antitrust laws—with that of protecting competitors.²⁰ The provision of the Agency Agreements cited in Level 3’s comments simply states that Level 3 and other independent providers of backhaul services may be competing against additional providers and that, to win VZW’s backhaul business, they must offer terms that are better than those of an MSO that is also competing to offer backhaul services to VZW. Level 3 has provided no meaningful

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¹⁹ See Mar. 26, 2012 Level 3 Reply Comments at 8.

²⁰ See *Brown Shoe Co. v. United States*, 370 U.S. 294, 320 (1962).

explanation why such a provision would be expected to lead to higher backhaul prices or otherwise diminished competition. Indeed, if anything, this provision is likely to have the pro-competitive effect of encouraging Level 3 and others to bid more aggressively than they otherwise would have in order to offer terms that the MSOs will not match.

13. In sum, then, I find the horizontal concerns of the opposing parties to be without merit. I do not anticipate that the Commercial Agreements will have any dampening effect on the incentives of the MSOs and Verizon Telecom to compete vigorously against each other for the backhaul business of wireless carriers.

B. THE VERTICAL BACKHAUL CONCERNS RAISED BY OPPOSING PARTIES ARE WITHOUT MERIT

14. The opposing parties also argue that the Commercial Agreements may harm competition among wireless carriers by inducing the MSOs to provide less favorable backhaul service terms to VZW's rivals than to VZW.²¹ Specifically, the opposing parties argue that the Commercial Agreements may create incentives for the MSOs not to bid aggressively (or perhaps not at all) on contracts to provide backhaul services to VZW's rivals,²² in an attempt to harm those rivals based on an economic theory often referred to as "raising rivals' costs."

15. It is important to highlight at the outset that the opposing parties' vertical theory of harm is an unusual raising rivals' costs theory because the MSOs (the firms that purportedly would raise VZW's rivals' input costs) do not currently compete with VZW's rivals (the purported targets of the raising rivals' costs strategy) for wireless service customers. Under

²¹ See, e.g., Mar. 26, 2012 Sprint Reply Comments at 14-15.

²² *Ibid.*

the opposing parties' argument, the MSOs are presumed to benefit from raising costs to VZW's rivals, perhaps because of potentially higher commissions under the Agency Agreements.²³ However as I discuss below, the link between the MSOs' commissions and VZW's rivals' backhaul costs is even more remote and tenuous than the already tenuous link between VZW's own profits and its rivals' backhaul costs, the traditional link in a raising rivals' cost theory.

16. Although the economic literature recognizes that in some settings, an input (*e.g.*, backhaul) provider may have an incentive to raise its rivals' costs for that input, this can only result in harm to competition **if four necessary conditions are all simultaneously satisfied** (and even then there may be no harm to competition—that is, the four conditions are only necessary not sufficient).²⁴ In the following paragraphs, I first describe each of these conditions and then explain why none of the conditions are met.

17. **First**, the MSOs must have the ability to raise backhaul prices significantly above current levels.²⁵ That is, putting aside for the moment whether the MSOs have the *incentive*

²³ The opposing parties do not specify a clear mechanism for how the MSOs' profits would increase by raising costs to VZW's rivals. Given the opposing parties' lack of clarity, I focus on commission payments to the MSOs as the most obvious potential mechanism, and I show that this mechanism is not sufficient to support a raising rival costs theory. Any alternative mechanism that opposing parties may have in mind has even less support, because for any such alternative, the opposing parties have not documented a path through which raising rivals' backhaul costs would increase the MSOs' profits; they have not demonstrated that any such effect would be significant; and they certainly have not shown that any such mechanism would satisfy the four necessary conditions for competitive harm, discussed below.

²⁴ See *e.g.*, Thomas Krattenmaker & Steven Salop (1986), "Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price," *Yale Law Journal* 96(2) at 242-248; and Steven Salop & David Scheffman (1983) "Raising Rivals' Costs," *American Economic Review* 73(2), at 267-271.

²⁵ Alternatively, the MSOs must be in a position to impair wireless carriers' services in a significant way by withholding wireless backhaul services from the wireless carriers.

to raise backhaul prices to VZW's rivals, the MSOs must have the *ability* to raise backhaul prices by a significant amount for any competitive harm to occur.

18. **Second**, backhaul costs per-subscriber per-month must make up a significant share of the monthly price of wireless service (or, equivalently, backhaul costs must represent a significant share of wireless service revenues). Absent this condition, even a significant increase in the cost of backhaul services will not translate into a significant increase in wireless service prices or significant harm to competition among wireless service providers. For example, [BEGIN HIGHLY CONFIDENTIAL]

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19. **Third**, a significant increase in backhaul costs incurred by VZW's rivals must significantly increase VZW's sales to wireless customers. And **fourth**, the MSOs must receive financial benefits from this increase in VZW sales that are sufficient to outweigh lost backhaul profits (arising from lost backhaul sales due to higher backhaul prices charged to

²⁶ Sprint, Notice of *Ex Parte* Communications, WT Docket No. 12-4, May 25, 2012, at 2.

²⁷ If the average monthly price ("ARPU") for wireless service is more than \$50 (See *e.g.*, Bank of America Merrill Lynch, *Global Wireless Matrix 4Q10*, Dec. 23, 2010, at 2) then [BEGIN HIGHLY CONFIDENTIAL]

[END HIGHLY CONFIDENTIAL]

VZW's rivals). The third and fourth conditions *together* mean that the MSOs must receive significant economic benefit from the sale of incremental VZW subscriptions, as otherwise the MSOs would not have an incentive to engage in the raising rivals' costs strategy. In particular, the economic gain to the MSOs from the sale of incremental VZW subscriptions must outweigh the lost backhaul profits they would suffer by engaging in an attempt to raise VZW's rivals' backhaul costs.

20. Each of these four conditions is necessary (though even collectively they may not be sufficient) for competitive harm to occur under the "raising rivals' costs" vertical theory of harm. However, as I explain below, these conditions are unlikely to be satisfied individually, let alone collectively.

1. **Necessary condition one—market power in backhaul—is not met.**

21. Regarding the first condition, the opposing parties do not establish that Comcast or the other MSOs possess significant power in setting backhaul prices. To the contrary, there is compelling evidence that MSOs face significant competition in the provision of backhaul services. Besides ILEC providers of backhaul such as AT&T and Verizon Telecom, MSOs compete with numerous other providers of backhaul services including Level 3,²⁸ DukeNet,²⁹

²⁸ See Press Release, Level 3, "Level 3 Works with 52Eighty to Develop 200 New Wireless Tower Sites Connected to Level 3's Advanced Fiber Backbone" (Oct. 17, 2011), available at <http://www.prnewswire.com/news-releases/level-3-works-with-52eighty-to-develop-200-new-wireless-tower-sites-connected-to-level-3s-advanced-fiber-backbone-131972618.html>, *site visited* July 28, 2012.

²⁹ See Press Release, Verizon Wireless, "DukeNet Helps Verizon Wireless Build First 4G LTE Network In United States By Providing High-Speed Backhaul Services in the Southeast" (March 24, 2010), available at <http://news.verizonwireless.com/news/2010/03/pr2010-03-24h.html>, *site visited* July 28, 2012.

Florida Power and Light,³⁰ XO,³¹ Zayo,³² TTMI,³³ DragonWave,³⁴ and many others. Indeed, public statements by both buyers and sellers of backhaul services indicate that there exists significant competition in the provision of such services.³⁵

22. In fact, the MSOs are relatively new entrants in the backhaul business and provide backhaul services to a modest (though rising) share of total cell sites. For example, Comcast, which is the largest MSO in terms of number of subscribers, is contracted to provide backhaul

³⁰ See Press Release, Alcatel-Lucent, "FPL FiberNet Deploys Mobile Backhaul Solution from Alcatel-Lucent to Enhance Broadband Service Delivery and Increase Bandwidth" (June 10, 2009), available at <http://www.bloomberg.com/apps/news?pid=conewsstory&tkr=LU:US&sid=aJqPqqxpb8Z4>, site visited April 30, 2012.

³¹ See Press Release, XO Communications, "XO Communications Announces New Teaming Agreement with Exalt Communications," (Mar. 23, 2011) available at <http://www.xo.com/about/news/Pages/508.aspx>, site visited July 28, 2012.

³² See Zayo Group's tower backhaul webpage, <http://www.zayo.com/tower-backhaul-msc-connectivity>, site visited July 28, 2012.

³³ See TTM, Inc.'s website, <http://www.ttmi.info>, site visited July 28, 2012.

³⁴ See Press Release, DragonWave, "DragonWave Strengthens Horizon Portfolio with Expanded Frequency Coverage" (May 1, 2012), available at <http://investor.dragonwaveinc.com/releasedetail.cfm?ReleaseID=668973>, site visited July 28, 2012.

³⁵ A statement in October 2011 by Level 3 indicates that there exists vigorous competition in the provision of wireless backhaul services. Level 3's VP of Wholesale Market Management, Amanda Teirney, stated in an interview with Carol Wilson of Light Reading that: "[Backhaul] is a very competitive space. We've seen - we've actually seen the competition really, really increase over the last twelve months, pretty dramatically. I think there - The MSO's seem to have really gotten into that space in earnest, CLECS are becoming very competitive..." (See Light Reading, "Level 3: Mobile Backhaul Brutally Competitive" (October 7, 2011), available at http://www.lightreading.com/video.asp?doc_id=213138, site visited May 22, 2012).

Similarly, a statement in March 2011 by Verizon Wireless CTO and Senior Vice President David Small indicates that there exists vigorous competition in the provision of wireless backhaul services: "I have been very impressed to see the amount of backhaul out there. In one market—which isn't a very large market—we had more than nine responses to an RFP we put out for backhaul ... In my view, we have a very healthy ecosystem." (See FierceWireless, "Verizon Wireless' Ongoing LTE Drive Creates a Lush Wireline-based Backhaul Opportunity" (Mar. 28, 2011), available at <http://www.fiercetelecom.com/story/verizon-wireless-ongoing-lte-drive-creates-lush-wireline-based-backhaul-opp/2011-03-28>, site visited July 28, 2012).

service to [BEGIN HIGHLY CONFIDENTIAL]

[END HIGHLY CONFIDENTIAL] of the more than 283,000 cell sites in the US.³⁷ Based on current market positions, even if one considered the possibility that all of the MSOs will act in concert to coordinate their backhaul pricing so as to raise VZW's rivals' costs (and there is no plausible basis for such an assumption), the MSOs are unlikely to have the power to significantly affect overall average backhaul prices. Given that Comcast accounts for about 39% of total MSO subscribers in the US,³⁸ and assuming that other MSOs are roughly as successful as Comcast in obtaining contracts to provide backhaul services to wireless carriers (in terms of the ratio of cell sites served to subscribers served), the MSOs in aggregate would still provide backhaul service to only about [BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL] of cell sites in the U.S.^{39, 40}

2. **Necessary condition two—backhaul costs make up a large percentage of wireless service revenues—is not met.**

23. As explained in paragraph 18, above, the evidence indicates that the second necessary

³⁶ Interview with Terrence Connell, Senior Vice President of Sales & Operations, Comcast Business Services, July 17, 2012.

³⁷ See <http://www.ctia.org/advocacy/research/index.cfm/aid/10323>, site visited July 28, 2012.

³⁸ See SNL Kagan's US Cable Subscriber Highlights that indicates that Comcast has a 38.51% share of domestic Basic Subscribers.

³⁹ If [BEGIN HIGHLY CONFIDENTIAL] [END HIGHLY CONFIDENTIAL] cell sites represent 39 percent of all cell sites for which MSOs provide backhaul service, the total number of cell sites for which MSOs provide backhaul service would be approximately [BEGIN HIGHLY CONFIDENTIAL]

[END HIGHLY CONFIDENTIAL] of the 283,000 cell sites in the U.S.

⁴⁰ In theory, opposing parties could try to "zoom in" on specific types of backhaul services where one or more MSOs has a greater share. However, more narrow types of backhaul also contribute less to the cost of wireless service and thus such theories are even less likely to meet necessary condition two, described in more detail below, than are theories about backhaul services as a whole.

condition is also not met: Backhaul costs (and especially backhaul costs paid to the MSOs) represent only a small share of wireless carriers' total revenues, meaning that backhaul costs per-subscriber per-month represent only a small share of the price of wireless service price per-subscriber per-month. For example, [BEGIN HIGHLY CONFIDENTIAL]

[END HIGHLY CONFIDENTIAL] For example, Sprint earned about \$27 billion in annual wireless services revenues in 2011,⁴³ [BEGIN HIGHLY CONFIDENTIAL]

[END HIGHLY CONFIDENTIAL] Thus, even if the MSOs were able to raise their backhaul prices significantly above current levels (and my analysis indicates that this is unlikely to be the case), the increase would not be expected to result in significant changes in prices or service offerings by VZW's rivals.

⁴¹ Interview with Terrence Connell, Senior Vice President of Sales & Operations, Comcast Business Services, July 17, 2012.

⁴² *Ibid.*

⁴³ See Sprint Nextel 2011 10K. T-Mobile's US wireless services revenues are not publicly available, but given T-Mobile's size as a wireless service provider it seems unlikely that Comcast's or the other MSOs' backhaul revenues account for a significant share of T-Mobile's annual revenue.